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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ZALUKAEVA, TATYANA

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/091,975

Applicant(s)

AERT ET AL.

Examiner

Tatyana Zalukaeva

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)<sup>v</sup>
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The transitional word (i.e. between the preamble and the body of claim) "characterized and phrases incorporating it are common in applications of European origin. IN U.S. practice claims containing those words and phrases are rejectable under 35 USC 112.2 when characterization may connote more than mere description (dictionary definition); in scientific parlance characterization may imply one or more physical steps or procedures (e.g. structure determination, elemental analysis, or qualitative tests) to identify a product. Since it is rare that applicant intends more than a mere description when using this language, physical steps are rarely disclosed. As such the reader may be unsure about the meaning of the wording of the claims, and additionally the scope of the claim is often unclear ("characterized conveys no degree of openness). Usually these troublesome words or phrases can be replaced by the standard transitional words, "having", "comprising", "wherein" and the like.

2. Claim 10 provides for the use of polymer particles , but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

The recited in claim 1 "... With a semi-continuous addition of monomer, which should be absent before initiating polymerization reaction..." constitutes an indefinite subject matter because it is not readily ascertainable as to what is meant by Applicants. Initiating step should involve the monomer by making the monomer either radically or ionically suitable for further propagation step. Correction and/or clarification is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0710675.

EP'675 discloses emulsion and solution free radical polymerization of ethylenic monomers in the presence of cyclodextrin or cyclodextrin derivatives (abstract, page 3, lines 50-57). The monomers suitable for polymerization are listed on page 4, lines 6-20 and 45-55 and are the monomers of the instant claims. A free radical initiator preferred is one of sodium potassium, lithium or ammonium persulfate (page 5, lines 5-10). The

Art Unit: 1713

method is performed without the addition of a surfactant (page 6, lines 16, 17). The solid contents are presented in Table 3-1 on page 11, and those values are below 30%w/w. The lack of large particles such as those 1-10 microns inherently provides the particle sizes with the range of the instant claim 8.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

Art Unit: 1713

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al (Polymer, 40 (1999), 6673-77), hereinafter referred to as Ritter'1. Ritter discloses suspension or emulsion polymerization of **butyl methacrylate (BMA)** in the presence of  **$\beta$ -cyclodextrin ( $\beta$ -CD)** in the presence of **free radical persulfate initiator** (introduction, experimental, pp. 6673, 6674). Batch emulsion polymerization of BMA was carried out. Detailed description of procedure is presented in section 2.2. "preparation of lattices" (page 6674). Particle size and solid content measurements have been made as seen in sections 2.4 and 2.5. Particle size distribution is presented in Table 1 on page 6674, and for the experiment of the article runs 4-13 show the results wherein the particle size distribution is from about 500 to about 800. One of the purpose of Ritter'1 article was to reduce the solids content of the lattices by achieving approximately 19%w/w (page 6675, right column, last paragraph). This is clearly within the claimed range.

With regard to particle sizes as claimed in the instant claim 8, if the recited micrometers are converted into nanometers the range is 20-20,000 nm. As seen from Table 1 on page 6674, particle sizes of examples 5-13 of Ritter 1 are clearly within the claimed range.

Thus Ritter'1 discloses all steps of the process, and all characteristics of the resultant products as instantly claimed.

Ritter'1 differs from the instant claims by disclosing a batch process versus semi-continuous process, as instantly claimed.

However, as it was held by the Courts, the claimed continuous operation would have been obvious in light of the batch process of the prior art, as per *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963).

9. Claims 1, 5, 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Storsberg et al (Macromol. Rapid communications, 2000, 21 1342-1346), hereinafter referred to as Storsberg.

Storsberg discloses polymerization of methyl Methacrylate or styrene in the presence of cyclodextrins under ATRP conditions in homogeneous aqueous solution (page 1342, last paragraph in right column). CD complexed initiator was added to CD complexed monomer in different molar ratios (page 1343, right column).

10. Claims 1,2,4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernhardt et al (Macromolecules, 2001, 34, 1647-1649), hereinafter referred to as Bernhardt.

Bernhardt discloses aqueous free radical polymerization of various alkyl and cycloalkyl acrylates in the presence of methylated cyclodextrin (abstract). The reference is also made to cyclodextrin aided polymerization of other monomers, such as N-isopropylacrylamide and styrene (introduction).

11. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Storsberg et al Macromolecules. Rapid Communication, 21, 236-41 (2000), hereinafter referred to as Storsberg'2.

Storsberg'2 discloses polymerization of hydrophobic monomers methyl methacrylate and styrene in the presence of  $\beta$ -CD from homogeneous aqueous solutions under free radical conditions in the presence of potassium persulfate initiator.

The disclosures of Storsberg'1, Storsberg'2 and Bernhardt differs from the instant claims by:

- a) not specifying the semi-continuous process, as per claim 1;
- b) not specifying the solid content, as per claim 1;
- c) not specifying the size of particles, as per claim 8.

With regard to "semi-continuous process" the rationale applied to Ritter'1 reference is incorporated herein in its entirety.

With regard to specific characteristics of the resultant polymer, it is a base presumption that one who performs the steps of a process must necessarily produce all of its advantages. Mere recitation of a newly discovered property or **function** that is inherently possessed by the things or steps in the prior art does not cause a claim drawn to those things to distinguish over the prior art.

**Leinoff v. Louis Milona & Sons, Inc.** 220 USPQ 845 (CAFC 1984)



Art Unit: 1713

12. Claim 9 is rejected under 35 U.S.C. 102(a) or 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over any one of the following, each one individually: Ritter'1, Storsberg'1, Storsberg'2 and Bernhardt.

Because of the nature of product-by process claims, the Examiner cannot ordinarily focus on the precise difference between the claimed product and the disclosed product. It is then Applicants' burden to prove that an unobvious difference exists. See In re Marosi, 218 USPQ 289, 292-293 (CAFC 1983).

See also footnote 11 O.G. Notice 1162 59-61, wherein a 35 USC 102/103 rejection is authorized in the case of product-by-process claims because the exact identity of the claimed product or the prior art product cannot be determined by the Examiner. In re Brown, 173 USPQ 685 (CCPA 1972), the Court of Customs and Patent Appeals (CCPA) explicitly approved the 102/103 rejection of a product-by-process claim over a reference which showed a product which appeared to be identical or only slightly different from the claimed product.

The rejection is also made in the sense of In re Thorpe, 227 USPQ 964 (CAFC 1985), wherein the Examiner rejected product-by-process claims over a product, which although prepared in a different manner, appeared to be the same (prima facie) as the claimed product.


13. Other prior art cited in PTO-892 shows the state of the art.

Art Unit: 1713

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (703) 308-8819. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

  
**Tatyana Zalukaeva, Ph.D.**  
**Primary Examiner**  
**Art Unit 1713**

June 24, 2003